



Emergency Elevator Procedures



Hoistway Door Unlocking Key Tool

Department of Fire Services / Massachusetts Firefighting Academy

Department of Public Safety

Elevator Division

Goal

- To provide a safe environment for firefighters when working near elevator equipment



Why We Are Here!



Look and Read!



Now in the MA Code!



What Is It?

- The hoistway door unlocking key tool has been used across the country for many years
- In 2003, Massachusetts adopted the use of this tool
- There will be NO retroactive installations*
- Its use is limited to licensed elevator mechanics, state elevator inspectors and trained firefighters

Section 6(a) and 6(b)-Fire Service Related

- EXCEPTION: If all the door panels and interlocks are replaced on an existing elevator, hoistway door unlocking devices for use by Massachusetts licensed elevator mechanics and trained firefighters are required.
- **Section 17.07** (6) No keys or devices shall be permitted which will unlock any landing door when the car is not within the landing zone.
- (a) On completion of the elevator installation and safety test, the elevator inspector shall notify the local fire department to have an authorized representative available to **witness a demonstration** by the elevator manufacturer or his agent on the purpose, operation and use of the hoistway door unlocking device. The unlocking device (tool) for that manufacturers' door shall be secured **at a location in the building that is readily accessible to the fire department.** **Effective 7/25/08.**
- (b) The opening of cars doors and landing doors and the closing of the same shall be the sole responsibility of the local fire department during firefighting or extrication operations.

Basic Elevator Procedures

- Can I wait for the elevator mechanic when the situation allows it?
- 90% of stalled elevator incidents are door closure problems
- Usually elevator incidents are nuisance problems rather than emergencies
- After evaluating the situation, ask yourself the first question again

Basic Elevator Procedures

- BEFORE any attempt is made to remove a passenger from an elevator, power must be DISCONNECTED in the machine room
- To avoid electrical arc injuries, stand to one side and look away from the disconnect when operating the switch
- Wear your protective gear!



Basic Elevator Procedures

- LOCK OUT/TAG OUT must be performed
- Whenever possible, maintain firefighter presence in the machine room during the incident





Lock Out / Tag Out

ASME A17.1 / CSA B44 Safety Code for Elevators and Escalators (2007)

ASME A17.4 Guide for Emergency Personnel (2008 Draft) Safety Code

OSHA Standard 1910.147 (b)

ASME 17.4 Guide

ASME A17.4 Guide for Emergency Personnel (2008 Draft)

- Section 1.2.3 Lock out/ Tag out Procedures (page 3)
- Whenever persons are being assisted from a stalled elevator car, adherence to strict lock out / tag out procedure must be followed. The mainline disconnect switch must be turned to the off position and a lock and tag installed on the disconnect switch in order to prevent anyone from turning the switch to the on position. The mainline disconnect switch is located in the elevator machine room

Lock out / Tag out

- Lock out - using a padlock will ensure that the unit will not be turned back on prior to an elevator mechanic examining it
- Tag out - list your fire alarm 24-hour telephone number for the mechanic to call for retrieval of fire departments' Lock out / Tag out equipment
- This will also keep the elevator from being run in an unsafe condition by building occupants or owners

OSHA Standard Definitions

- **Lockout.** The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
- **Lockout device.** A device that utilizes a positive means such as a **lock, either key or combination type**, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.
- **Tagout.** The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
- **Tagout device.** A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed

Upon Arrival

- Carry necessary tools in with you (Short folding ladder, forcible entry tools etc)
- Does your department issue the Hoistway Door Unlocking Tool sets?
- Have you noticed any installations in your district?



Gaining Access

- Use your Knox Box key to gain access to the building
- Remove the tool if stored in Knox Box
- Check the remote elevator annunciator in the Fire Command Room for elevator location



What Will I find?

- Each key is dependent upon:
 - The type of hoistway door interlock installed (all doors in hoistway will use the same key tool)
- Manufacturers may utilize various key tools, depending upon the design and the Interlocks used by that company
- Many different companies may service a buildings elevators over the service life of the system, thus integration of parts occurs

Procedure to Follow

- Always perform “power down”
- Always perform lock out / tag out
- NEVER move an elevator
- DOCUMENT all responses, including notifying the DPS-elevator division of your response and actions
- Fire incident reporting system (NFIRS)

Procedure to Follow

- Call for elevator mechanic immediately
- If you can await mechanic, do so
- Secure proper key tool
- Always work with another firefighter at scene
- Confirm with machine room team that lock out/tag out has been performed
- Determine approximate location of car in hoistway

Procedure to Follow

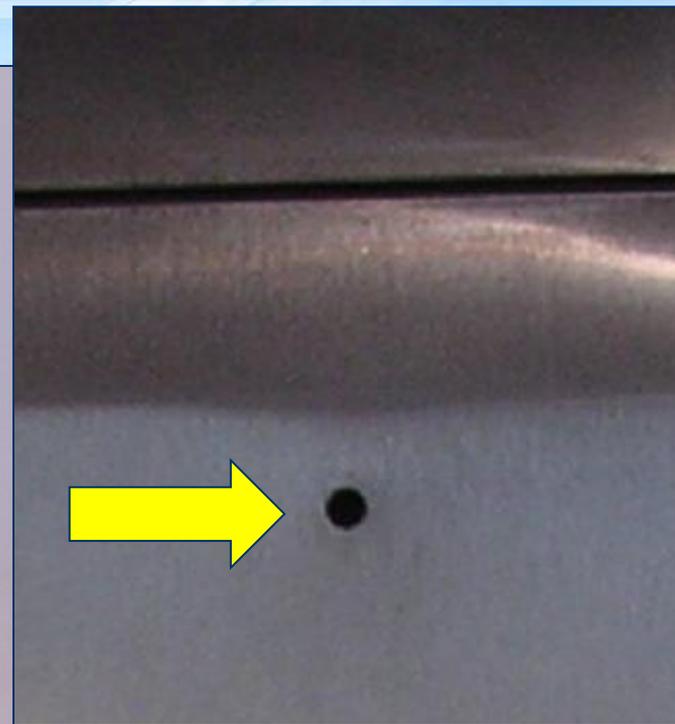
- Use tool to open hoistway door
- If at wrong level, shut door and test for locking
- If at proper level, gain access to car
- Follow fire department plan for passenger safety
- Follow fire department SOG for firefighter safety

Double-Leaf Drop Key

- Turning handle
- Stop
- Cylinder
- Allen set screw
- Single or Double Drop leaf



Otis Tool Hole



Otis Tool (1)

- Looks like a screw driver
- Inserts into hole in door
- Then into the door interlock



Otis Tool (2)

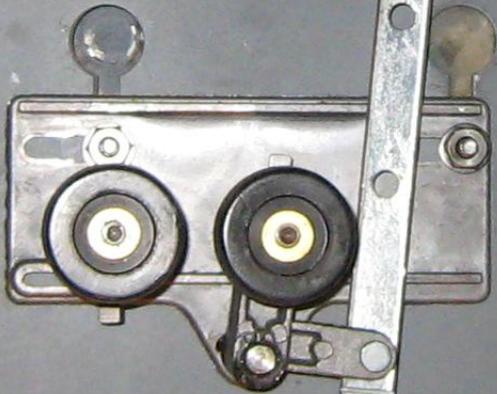
- Looks like a screw driver with drop section
- Inserts into hole in door
- Then into the pick up rollers







3



FORCES INC.
FIRST DOOR
11
NO. 8



G.A.L. MFG. CO
NEW YORK CITY
TOP SAFETY RETAINING
-TYPE "A" HANGER
TURN ANGLE TO VERTICAL
POSITION FOR RETAINING



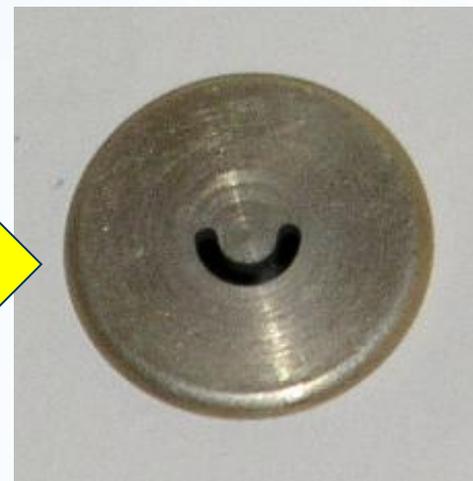
GAL
ELEVATOR DEVICES
TOP SAFETY RETARDER
-TYPE "A" HANG
TURN ANGLE TO V
POSITION FOR RET



Key Hole for Opening Door on All Floors



Schindler Tool



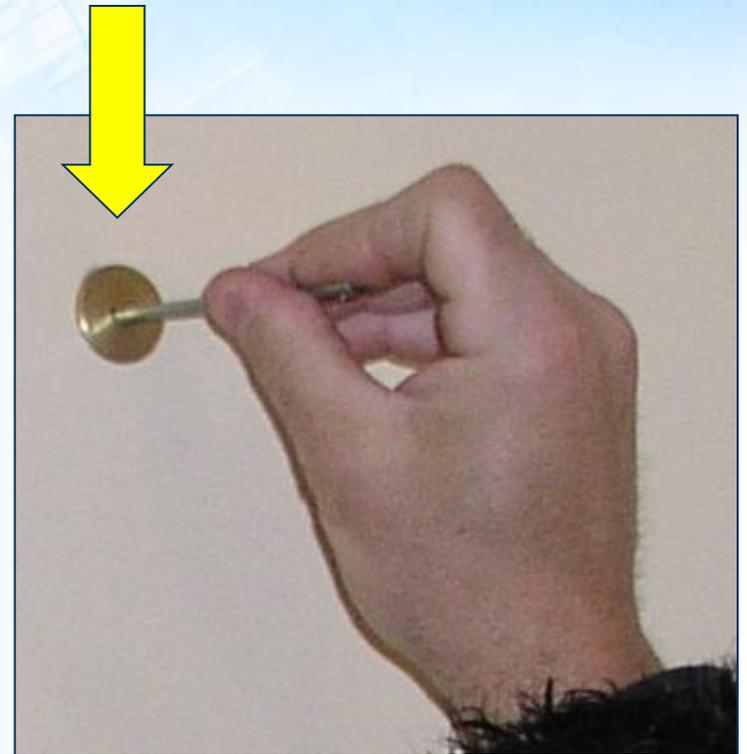
Insert Tool (Schindler)

- Look before you spread!



Move Tool

- Insert key half way, then pull down on key



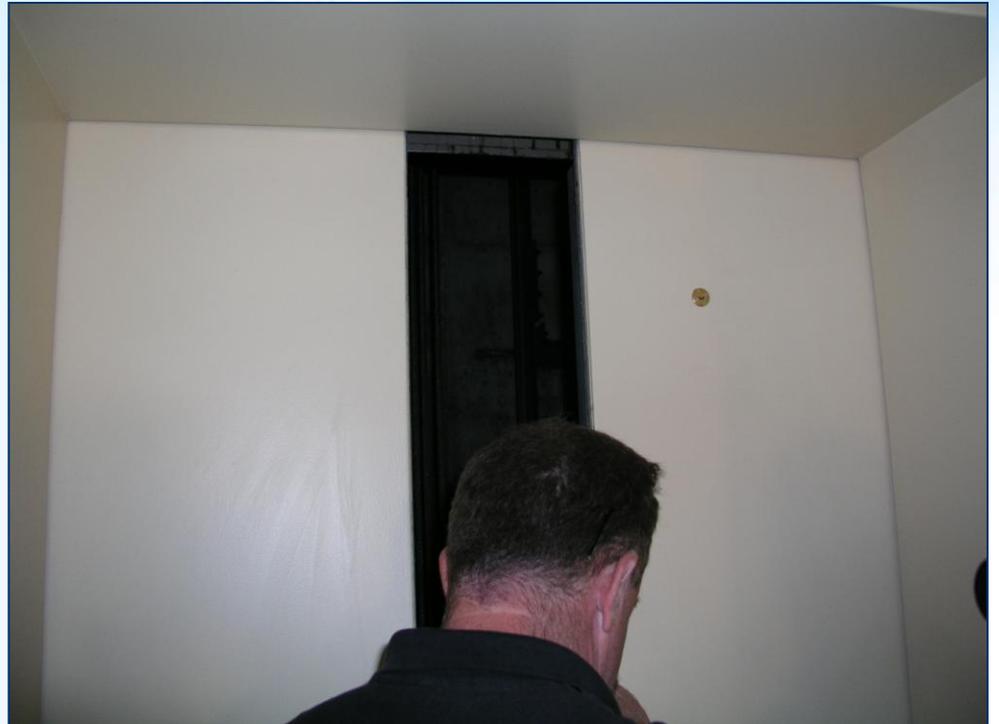
View From Inside the Hoistway

- Inserted key lifts bar up, releasing the lock keeper in the lock box located above the dust cover

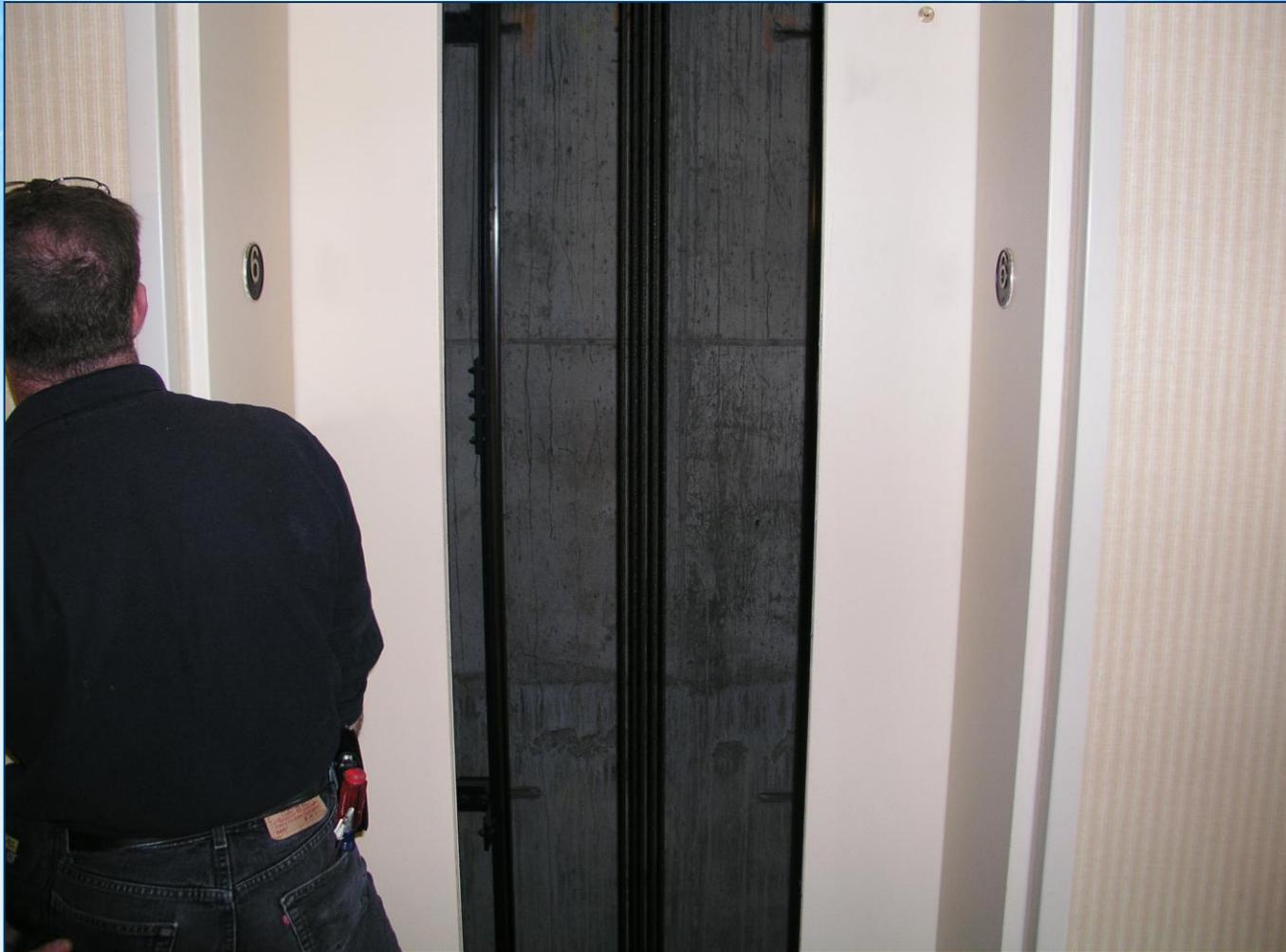


Precautions!

- Standing to one side
- **SLOWLY** open door



LOOK Into Hoistway As You Open Door!

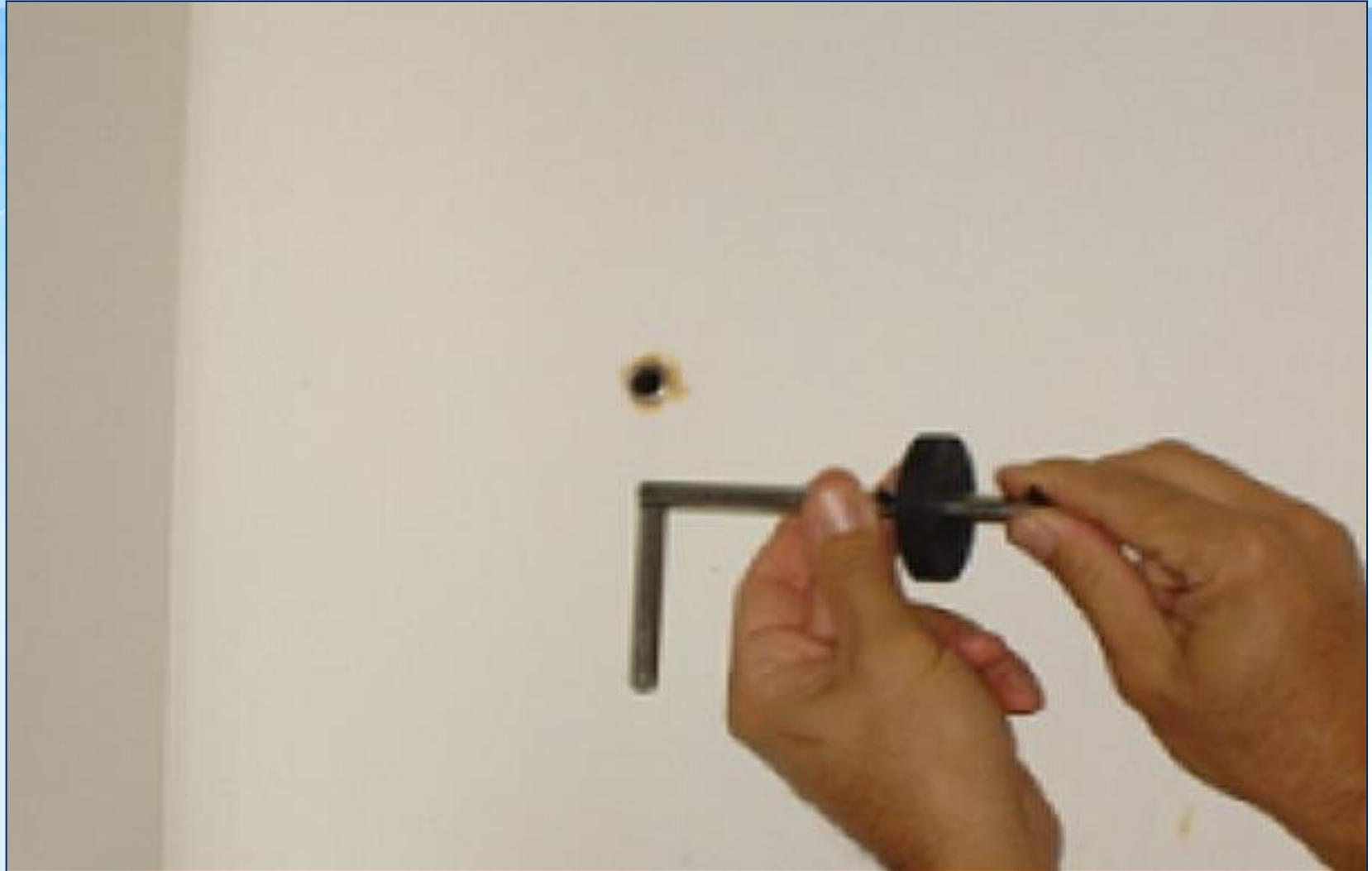


BEWARE, car may be above or below

- Beware, car may be above or below!



Single-Leaf Drop Key



Single Drop Key

- Slide the tool all the way into the access hole
- “Stop” must be pre-set for proper space, allowing drop section to insert between release rollers



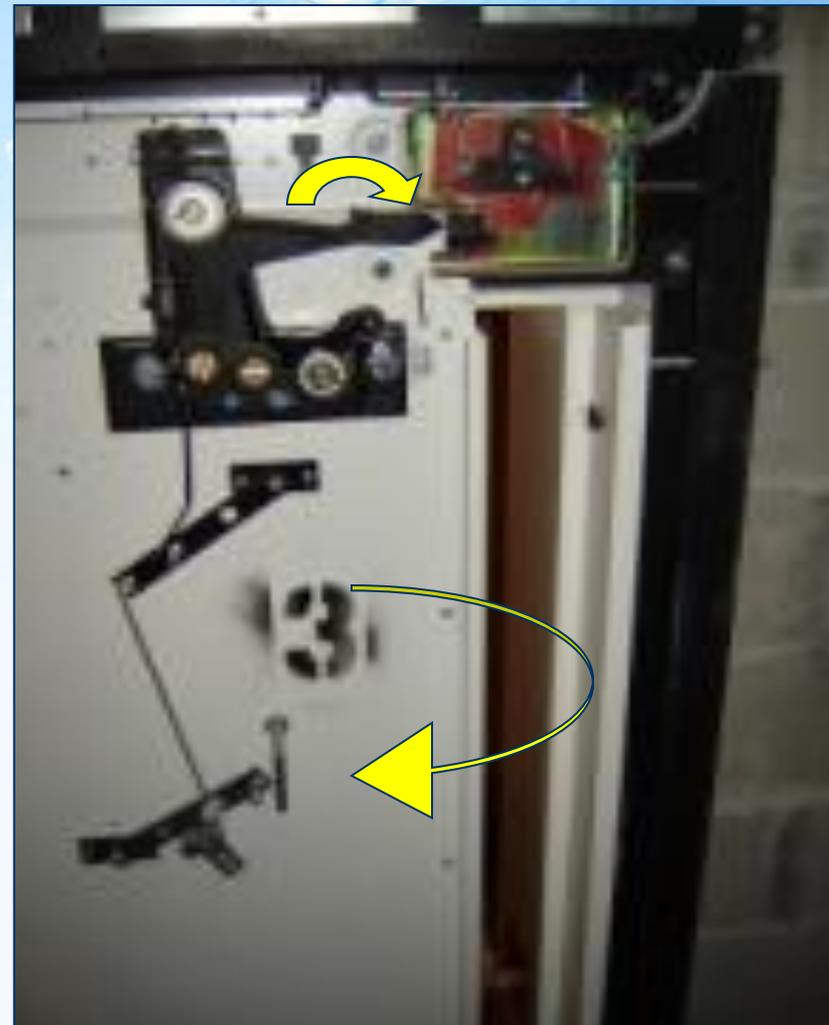
Proper Procedure-Again!

- Always have another firefighter work with you when opening the door
- Make sure that you remove your hand and the tool after you have cleared the keeper from the lockbox
- If you don't, you will slam your hand into the door frame as it opens fully



Single-Leaf Drop Key

- Note how the “keeper” (top arrow) has cleared the interlock, and the door is freed to being pulled open by the firefighter
- In the lower part of the picture (lower arrow) you can see the single drop key

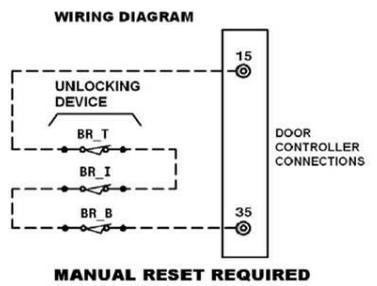
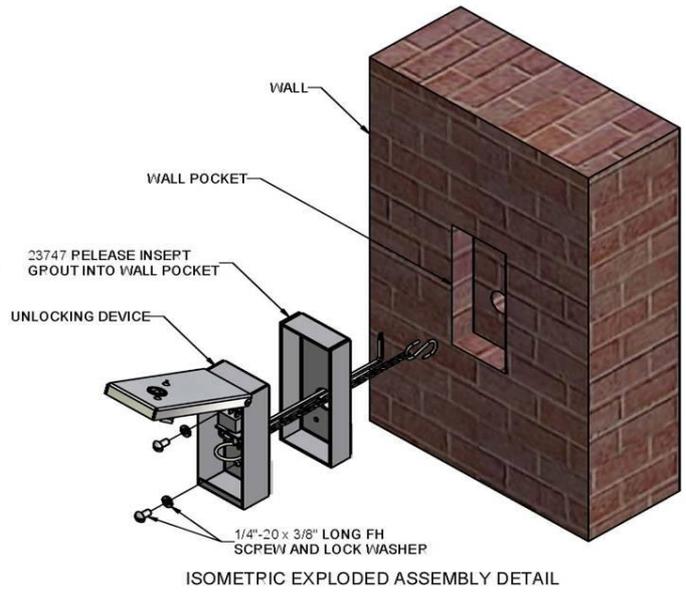
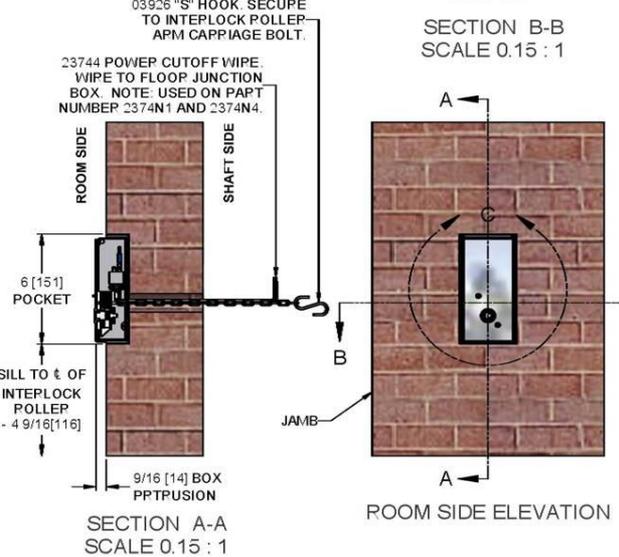
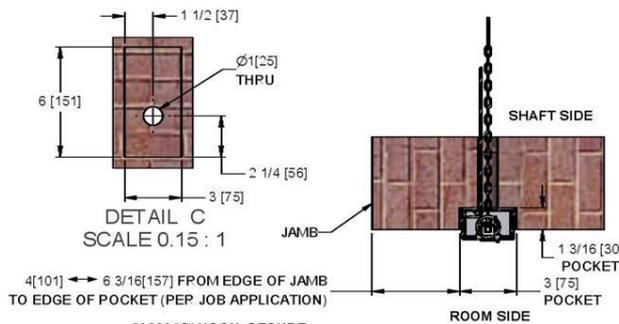


Bi-Parting Freight Doors

- Emergency Hoistway door unlocking tool access will be marked
- Follow the instructions as in the following slide



Bi-Parting Freight Doors



2374N1/2374N4 UNLOCKING DEVICE (FLUSH MOUNTED ON WALL)
2374 TYPICAL, BUT WITHOUT 23744 POWER CUTOFF WIRE

Technical Rope Rescue

- Full harness protection
- Properly tested and stored rope
- Used by members trained in their use



Technical Rope Rescue

- Ropes and harnesses are required for all
- There are no exceptions
- You **MUST** secure all involved with rope protection



Reminder!

- Before this program is used, firefighters must be trained in its use
- An assortment of keys may be purchased on the internet by going on-line
- Speak with the local elevator representative responsible for that building about securing a particular key for a building in your district
- Locate the key in the “Knox Box”, or other similar secure repositories (Gamewell, etc.)

MBER/DFS

- This content of this program has been approved by the Department of Fire Services (DFS) and the Massachusetts Board of Elevator Regulations (MBER)

Questions?



Thank You for Your Time and Attention



Emergency Elevator Procedures